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| 10/079,405 | 02/22/2002 | Teruhiko Nagatomo | 1095.1212 | 7019 |
| 21171 | 7590 | 03/13/2006 | EXAMINER | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | PHILPOTT, JUSTIN M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2665 | |

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/079,405 | NAGATOMO ET AL. |
| | Examiner Justin M. Philpott | Art Unit 2665 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 February 2002.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-16 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 22 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1, 15 and 16 are objected to because of the following informalities: it is unclear whether "control information" (in claim 1) at lines 7-8 and "control information" at line 11 refer to the same control information; and if not, to which "control information" reference is being made at line 15; additionally, "3rd" (claim 1, line 4) should be changed to "third". Objections to the same language in claims 15 and 16 is also made for the same reasons as in claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, claims 1, 15 and 16 each recite "extracting header information belonging to a 3rd layer and higher *layers* of a network protocol" (emphasis added). While applicant's specification also generally states "and higher layers" in various passages, applicant's specification is only enabling for extracting header information belonging to second, third and/or

fourth layers (e.g., see paragraphs labeled as 0035, 0084, 0086, 0089, 0111, 0115, 0122-0124, 0127, 0139-0141, 0143, 0144, 0155, 0159-0161, 0163 in the publication of applicant's specification, US 2002/0159459). That is, applicant's specification does not enable extracting header information belonging to a layer higher than a fourth layer, e.g., a fifth, sixth, or seventh layer of the OSI model. Thus, applicant's specification cannot enable such extracting belonging to a *plurality* of layers above the third layer, as recited in applicant's claims.

Applicant may overcome this rejection by amending the claims to recite either, "... belonging to a third layer and a higher layer of a network protocol" or "... belonging to a third and fourth layer of a network protocol".

4. Claims 2-14 depend upon claim 1 and are rejected for the same reason discussed above regarding claim 1.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 9 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 9 recites the limitation "the items" (line 7), and it is unclear to what "items" reference is being made. Accordingly, there is insufficient antecedent basis for this limitation in the claim. Furthermore, claim 9 recites the limitation "the table" (line 6) and it is unclear which of the two tables is being referenced, since claim 7, upon which claim 9 depends, recites a plurality of tables. Correction is required.

Additionally, claim 14 recites the limitation “the priority thereof” (line 5), and there is insufficient antecedent basis for this limitation in the claim. Applicant may overcome this rejection by amending claim 14 to be dependent upon claim 13 instead of claim 1.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-8, 10, 11, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. US 2002/0085560 A1 by Cathey et al.

Regarding claims 1, 15 and 16, Cathey teaches a packet transfer device (e.g., packet switching controller 100, see FIG. 1) comprising: a plurality of input/output ports (e.g., see paragraph 0011 regarding a plurality of inputs and providing one or more outputs); a header information extracting circuit (e.g., header data extractor, see paragraphs 0010 and 0028) for extracting header information (e.g., see paragraphs 0010 and 0028) belonging to a third layer and higher layers of a network protocol (e.g., see paragraph 0029 regarding Layer 3 and Layer 4) from packets inputted from the respective input/output ports; a table (e.g., header data cache, see paragraphs 0028-0029 and 0048-0049) storing header information (e.g., extracted header data, see paragraphs 0028-0029 and 0048-0049) and control information (e.g., header data cache index, see paragraph 0010) corresponding to the header information is association with each

other; a control information acquiring circuit (e.g., packet classification engine 104/204, see FIGS. 1 and 2) for acquiring control information (e.g., addresses) corresponding to the header information extracted by the header information extracting circuit (e.g., header data extractor) from the table (e.g., header data cache) (e.g., see paragraph 0029-0030); and a processing circuit (e.g., application engine 106/206/408) for processing packets based on the control information acquired by the control information acquiring circuit (e.g., see paragraphs 0030-0031 and 0041-0044).

Further, regarding claim 15, Cathey teaches the device discussed above regarding claim 1 comprises a semiconductor device (e.g., see title "programmable packet processor with flow resolution logic", which is inherently a semiconductor device).

Further, regarding claim 16, Cathey teaches the device discussed above regarding claim 1 is comprised within and connects a packet transfer system for transferring packets between a plurality of networks (e.g., see paragraphs 0002-0005 regarding networks and paragraphs 0006-0011 regarding packet switching controller).

Regarding claim 2, Cathey teaches control information (e.g., addresses) represents whether or not a filtering process is to be effected on a packet or not (e.g., destination lookup engine 412 determines whether or not to issue a disposition recommendation 428 for a disposition engine process based upon the destination addresses), and the processing circuit (e.g., application engine 106/206/408) discards the packet if the control information indicates that the filtering process is to be effected on the packet (e.g., see paragraph 0080 regarding dropping the packet in order to edit the inbound packets, wherein disposition recommendation occurs unless a pattern match result 424 of the address is produced).

Regarding claim 3, Cathey teaches an input/output port connected to an external network (e.g., see paragraph 0027 regarding interfacing with communication networks), wherein the processing circuit (e.g., application engine 106/206/408) filters a packet inputted from the input/output port connected to the external network if the packet has address information of an internal unit thereof (e.g., see paragraphs 0070-0084).

Regarding claim 4, Cathey teaches control information (e.g., destination address) represents either one of the input/output ports from which to output the packet, and the processing circuit outputs the packet from the input/output port represented by the control information (e.g., see paragraphs 0070-0084, and particularly step 466 of FIG. 8 regarding transmitting the outbound packet).

Regarding claim 5, Cathey teaches the table stores a plurality of items of header information belonging to different layers and control information corresponding to the items of header information (e.g., see paragraph 0029 regarding storing Layer 2, Layer 3, and Layer 4 information and storing corresponding addresses, as well as header data index in paragraph 0060).

Regarding claim 6, Cathey teaches a plurality of tables storing different items of information (e.g., see paragraph 0010 regarding header data cache index, and see paragraphs 0036 and 0076-0078 regarding address table).

Regarding claim 7, Cathey teaches a process determining circuit (e.g., destination lookup engine 412, see paragraphs 0077-0080) for determining a process to be actually performed by the processing circuit (e.g., application engine 106/206/408) if a plurality of items of control information (e.g., destination address information) are acquired from a plurality of tables (e.g.,

see paragraph 0010 regarding header data cache index, and see paragraphs 0036 and 0076-0078 regarding address table) with respect to one packet by the control information acquiring circuit (e.g., packet classification engine 104/204, see FIGS. 1 and 2).

Regarding claim 8, Cathey teaches the control information (e.g., addresses) represents whether a filtering process is to be effected on a packet or not (e.g., destination lookup engine 412 determines whether or not to issue a disposition recommendation 428 for a disposition engine process based upon the destination addresses), and the process determining circuit (e.g., application engine 106/206/408) discards the packet if the items of control information are acquired from the tables and either one of the acquired items of control information indicates that the filtering process is to be effected on the packet (e.g., see paragraph 0080 regarding dropping the packet in order to edit the inbound packets, wherein disposition recommendation occurs unless a pattern match result 424 of the address is produced).

Regarding claim 10, Cathey teaches the control information (e.g., addresses) includes information representing either one of the input/output ports from which to output the packet and information representing whether a filtering process is to be effected on a packet or not (e.g., destination lookup engine 412 determines whether or not to issue a disposition recommendation 428 for a disposition engine process based upon the destination addresses), and the process determining circuit (e.g., application engine 106/206/408) discards the packet if both the information representing either one of the input/output ports from which to output the packet and the information representing whether the filtering process is to be effected on the packet or not are acquired from the tables (e.g., see paragraph 0080 regarding dropping the packet in order to

edit the inbound packets, wherein disposition recommendation occurs unless a pattern match result 424 of the address is produced).

Regarding claim 11, Cathey teaches a routing processing circuit (e.g., pattern match module 108) for performing a routing process (e.g., see paragraph 0033).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cathey.

Regarding claims 12 and 14, Cathey teaches the device discussed above regarding claim 1, however, may not specifically disclose a table rewriting circuit for rewriting information stored in the table. However, the memory in Cathey is identified as RAM (e.g., see paragraphs 0030-0038), and one of ordinary skill in the art readily recognizes that RAM is rewritable, and would implicitly be rewritten by some form of rewriting circuit. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to include a table rewriting circuit in the device of Cathey since Cathey discloses storage is via RAM and since one of ordinary skill in the art readily recognizes that RAM is rewritable, and would implicitly be rewritten by some form of rewriting circuit.

Regarding claim 13, and further regarding claim 14, Cathey teaches the device discussed above regarding claim 1, however, may not specifically disclose processing packets in

accordance with a priority. However, Examiner takes official notice that it is well known in the art to process packets in accordance with priorities. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to process the packets in the device of Cathey in accordance with packet priority since it is well known in the art to process packets in accordance with priorities.

Further, regarding claim 14, Cathey teaches the processing circuit writes, reads and transmits the packet (e.g., see paragraphs 0070-0084).

Allowable Subject Matter

11. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not specifically disclose a device such as described in claim 7 which further comprises outputting a packet represented by control information acquired from tables containing header information belonging to a *highest* layer *if particular items* of control information are acquired from the tables.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 6,115,378 to Hendel et al., 6,704,794 to Kejriwal et al., and

Art Unit: 2665

6,791,947 to Oskouy et al., and U.S. Patent Application Publication No. US 2001/0053150 A1

by Clear et al., each disclose devices for extracting header information for packet processing.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571.272.3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin M Philpott


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